MULTI-PANEL ELECTRONIC DEVICE

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] The present disclosure claims the benefit of Provisional Application No. 61/095,225, filed Sep. 8, 2008 and 61/182,316, filed May 29, 2009, which is incorporated by reference herein in its entirety and to which priority is claimed.

FIELD

[0002] The present disclosure is generally related to a multi-panel electronic device.

DESCRIPTION OF RELATED ART

[0003] Advances in technology have resulted in smaller and more powerful computing devices. For example, there currently exist a variety of portable personal computing devices, including wireless computing devices, such as portable wireless telephones, personal digital assistants (PDAs), and paging devices that are small, lightweight, and easily carried by users. More specifically, portable wireless telephones, such as cellular telephones and internet protocol (IP) telephones, can communicate voice and data packets over wireless networks. Further, many such portable wireless telephones include other types of devices that are incorporated therein. For example, a portable wireless telephone can also include a digital still camera, a digital video camera, a digital recorder, and an audio file player. Also, such wireless telephones can process executable instructions, including software applications, such as a web browser application, that can be used to access the Internet. As such, these portable wireless telephones can include significant computing capabilities.

[0004] Although such portable devices may support software application, the usefulness of such portable devices is limited by a size of a display screen of the device. Generally, smaller display screens enable devices to have smaller form factors for easier portability and convenience. However, smaller display screens limit an amount of content that can be displayed to a user and may therefore reduce a richness of the user's interactions with the portable device.

SUMMARY

[0005] In a particular embodiment, an electronic device is disclosed that includes multiple folding display panels. When fully extended, the electronic device can provide an extended larger display. When fully folded to a closed position, the electronic device can provide a small form factor and still provide an abbreviated view similar to a cell phone. In general, the multiple folding display panels enable the electronic device to be used as multiple types of devices depending on how the electronic device is folded or configured. By enabling the electronic device to be positioned in multiple foldable configurations, a user of the electronic device may elect to have a small form factor for easy maneuverability and functionality or may elect an expanded, larger form factor for displaying rich content and to enable interaction with one or more software applications via expanded user interfaces.

[0006] When handling an electronic device that either folds at one or more hinges, or bends in one or more locations, knowing how the electronic device is folded or bent enables the user experience to be customized to the electronic device usage. Using accelerometers, one in each non-bending or non-flexing section of the electronic device, the relative angle between sections may be determined and the overall configuration of the electronic device may be understood. The relative angle between sections suffices to account for the orientation of the electronic device. For example, two panels folded up like a clam shell may have substantially opposite accelerometer angle readings independent of the orientation or angle that they are held. Similarly, two panels fully extended and folded flat may have substantially the same accelerometer angle readings independent of the orientation or angle that they are held.

[0007] In a particular embodiment, a method includes receiving first acceleration data from a first sensor coupled to a first portion of an electronic device. The method further includes receiving second acceleration data from a second sensor coupled to a second portion of the electronic device, where a position of the first portion is movable with respect to a position of the second portion. The method further includes determining a configuration of the electronic device at least partially based on the first acceleration data and the second acceleration data.

[0008] For example, the determined configuration may include a fully folded configuration, a fully extended configuration, a thumbing configuration, a travel clock configuration, a video conferencing configuration, or one or more other configurations. In a particular embodiment, a processor in the electronic device can execute applications across the first, second, and third display surfaces in the fully extended configuration and can execute applications at the first display surface in the fully folded configuration.

[0009] In another particular embodiment, an apparatus is disclosed that includes a first sensor coupled to a first portion of an electronic device. The apparatus further includes a second sensor coupled to a second portion of the electronic device, where a position of the first portion is movable with respect to a position of the second portion. The apparatus further includes an orientation module configured to determine a configuration of the electronic device at least partially based on first acceleration data received from the first sensor and second acceleration data received from the second sensor.

[0010] In another particular embodiment, a computer readable storage medium storing computer executable code includes code for receiving first acceleration data from a first sensor coupled to a first portion of an electronic device. The computer readable storage medium further includes code for receiving second acceleration data from a second sensor coupled to a second portion of the electronic device, where a position of the first portion is movable with respect to a position of the second portion. The computer readable storage medium further includes code for determining a configuration of the electronic device at least partially based on the first acceleration data and the second acceleration data.

[0011] In another particular embodiment, an apparatus includes first sensing means for generating first acceleration data, the first sensing means coupled to a first portion of an electronic device. The apparatus further includes second sensing means for generating second acceleration data, the second sensing means coupled to a second portion of the electronic device, where a position of the first portion is movable with respect to a position of the second portion. The apparatus further includes means for determining a configuration of the electronic device at least partially based on the first acceleration data and the second acceleration data.